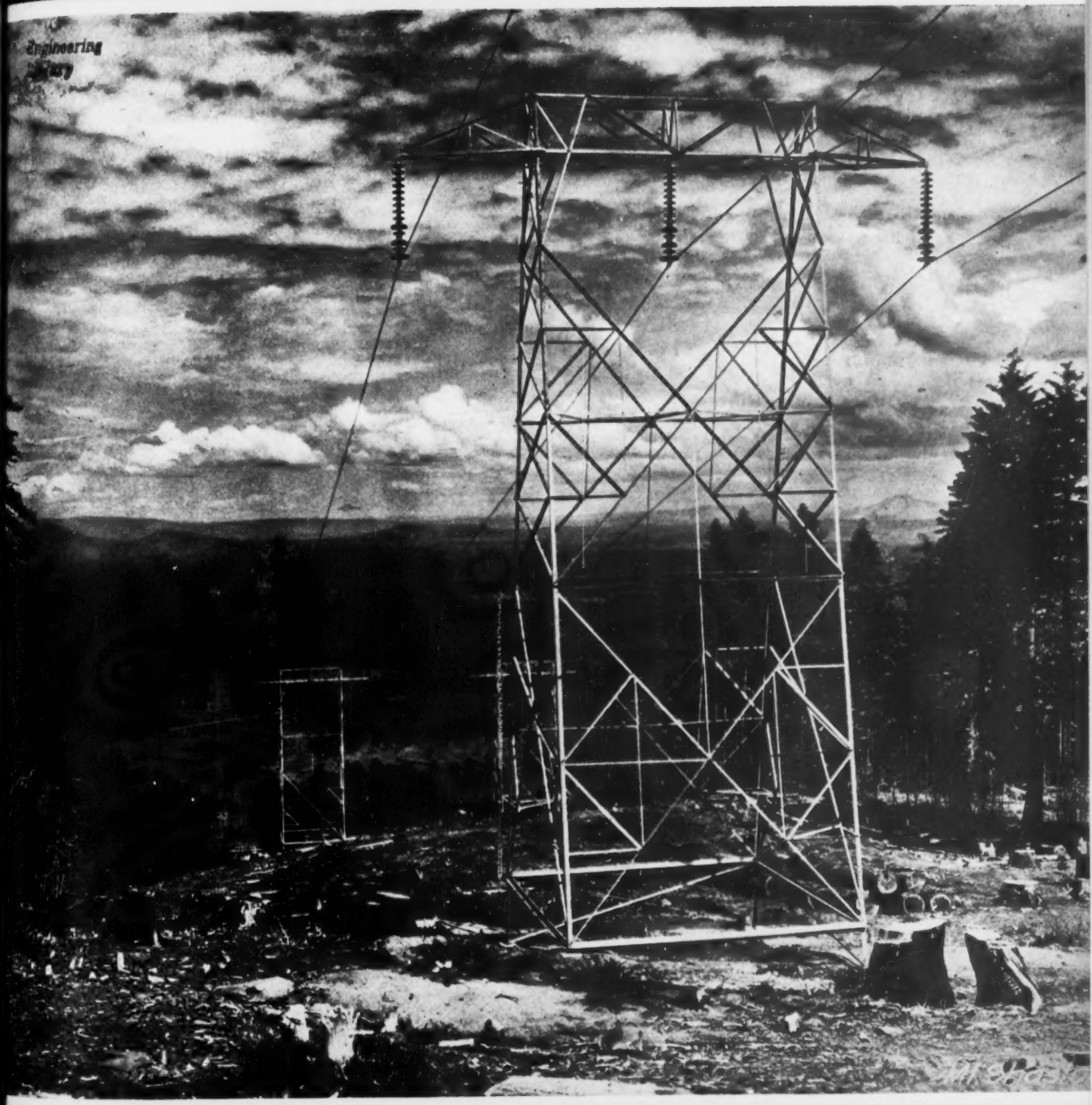
# Industrial Standardization

*and* Commercial Standards Monthly



December

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1934

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*Front Cover: Courtesy of Ohio Brass Company*


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# AMERICAN STANDARDS ASSOCIATION

## ASA MEMBER-BODIES

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AM. HOME ECONOMICS ASSN.
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# Code for Sanitation in Factories Submitted to ASA for Approval

MINIMUM requirements for sanitation in manufacturing establishments, which if put into practice may be expected to materially reduce the economic loss to industry through illness, have been outlined by a committee representing all of the groups interested. These requirements, contained in the Safety Code for Industrial Sanitation, have been submitted to the American Standards Association for approval as a national standard.

After careful consideration of the available knowledge and experience in industrial sanitation, the committee recommends these minimum requirements for use by employers and building owners and for adoption and enforcement by administrative authorities to protect the health of employees.

Regulations for water supply, lighting, ventilation, waste disposal, toilet facilities, washing facilities, dressing rooms, and lunch rooms are among those recommended in the proposed standard code for industrial sanitation.

**Representatives of all groups interested in industrial sanitation worked on the committee which drafted the safety code for use in manufacturing establishments.**

**The following are members of the committee:**

*Dr. R. R. Sayers*, U. S. Treasury Department, Bureau of Public Health Service, *Chairman.*
*Cyril Ainsworth*, American Standards Association, *Secretary.*

American Association of Industrial Physicians and Surgeons, *Dr. C. H. Watson*
American Atmos Company, *C. A. Purcell*
American Gas Association, *C. C. Winterstein*
American Institute of Architects, *S. R. Bishop, F. Leo Smith (alt.)*
American Public Health Association, *Dr. Emery R. Hayhurst*
American Railway Association, Operating Division, Medical and Surgical Section, *Dr. G. G. Dowdall*
American Society of Civil Engineers, *George W. Fuller, C. A. Emerson, Jr. (alt.)*
American Society of Sanitary Engineering, *Thomas M. Dugan*
American Telephone and Telegraph Company, *Dr. L. D. Bristol*
American Transit Association, *R. C. Cram*
Conference Board of Physicians in Industry, *Dr. C. H. Watson*
Connecticut Department of Public Health, *Dr. Albert Gray*
Consumers' League of New York, *Mrs. Elinore M. Herrick*
Crane Company, *Roy H. Zinkil*
Electric Light and Power Group, *E. W. Gorry, Alexander Maxwell (alt.)*
International Association of Governmental Labor Officials
International Association of Industrial Accident Boards and Commissions, *John Campbell, S. W. Homan (alt.), Swen Kjaer, John Roach, G. J. Speidel (alt.)*
Kaustine Company, Inc., *J. Warren Fortenbaugh*
Kohler Company, *W. J. Ireland*
Massachusetts Department of Labor and Industries, *J. P. Meade*
Metropolitan Life Insurance Company, *Dr. A. J. Lanza*
National Association of Mutual Casualty Companies
National Bureau of Casualty & Surety Underwriters, *Holger Jensen, W. M. Graff (alt.)*
National Safety Council, *R. H. Ferguson, Dr. C. H. Watson*
New York Department of Labor, *John Vogt, Dr. C. T. Graham-Rogers (alt.)*
San-Equip Incorporated, *K. D. Jaquith, W. A. Hardenbergh (alt.)*
U. S. Department of Commerce, Bureau of Mines, *Dr. R. R. Sayers*
U. S. Department of Labor, *George Cartlidge, D. C. Dow, J. J. Manning*
U. S. Department of Labor, Women's Bureau, *Mrs. Ethel L. Best*
U. S. Navy Department, *S. S. Cook, W. P. Biggs*
U. S. Treasury Department, Bureau of Public Health Service, *Dr. Roy R. Jones*
U. S. War Department, *Major E. A. Noyes, Dr. R. R. Sayers*

As a result of the organized effort to reduce accidents, loss from accidents has become considerably less than loss through illness. The success of safety codes led to the promotion of a standard code for industrial sanitation, and the U. S. Public Health Service, which was a leader in both the accident and sanitation work, was chosen to take the leadership in developing a sanitation code under the procedure of the American Standards Association.

Because the municipal standards in many industrial communities are influenced by standards prevailing in industrial plants, adoption of the code may be expected to aid in the promotion of better public health in these communities, as well as to reduce the loss of life and economic loss in industry due to preventable diseases.

Supplementing the recommendations of the Safety Code for Industrial Sanitation in Manufacturing Establishments, the committee recommends the adoption of specifications for drinking fountains approved by the U. S. Department of Labor and the American Public Health Association and printed in Bulletin 87 of the Women's Bureau, and the specifications of the Public Health Service, The Sanitary Privy, Supp. 108.

## Commercial Standard Specifies Quality of Domestic Burners

A commercial standard for domestic burners (underfeed stokers) using Pennsylvania anthracite coal, which is expected to provide a nationally recognized basis for certification of quality and performance, has been printed and is now ready for distribution.

Buyers may use the standard as a basis for performance criteria and tests, and it is believed that its application will protect users from receiving inferior equipment. The industry also will be protected from destructive effects which follow the sale of burners that cause trouble and dissatisfaction through over-rating or other improper claims.

The standard covers minimum requirements for material, design and construction, installation including the design and capacity of coal storage, conveying and ash removal systems, as well as means for adequate lubrication, draft, fans, controls, capacity, workmanship, and flue connections. Operating requirements are given, as well as methods for determining ratings and efficiency.

A recommended form of certification for use by both the manufacturer and the installing contractor is incorporated in the standard.

Particular effort was made to avoid requirements which would interfere with new and improved design and construction, and a standing committee of manufacturers, distributors, and users was appointed to facilitate the revision of the standard in order to keep it up to date.

The standard is based on the approval code for domestic underfeed stokers of the Anthracite Institute Laboratory. It was presented to the Bureau of Standards at the request of the Laboratory and was adopted by a general conference of manufacturers, coal producers, distributors, and users in March.

The conference considered the question of submitting the standard to the American Standards Association for approval but it was agreed that it would be desirable to have a period of trial before submitting it to the ASA.

Copies of the Standard (CS 48-34) can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., or from the American Standards Association at five cents each.

## Zimmer Named Director of Labor Standards Division

Secretary of Labor Perkins has appointed Verne A. Zimmer as director and Mrs. Clara M. Beyer as assistant director of the new Division of Labor Standards, organized to aid "interested parties and organizations to secure improvements in the working and living conditions of wage earners."

Mr. Zimmer has been director of the Division of Workmen's Compensation of the New York State Department of Labor and Mrs. Beyer has been head of the Industrial Division of the Children's Bureau of the Department of Labor.

The new bureau will encourage and advise State and non-official organizations interested in improving the physical conditions of work places and in preventing accidents and occupational diseases.

"It will be at the disposal of any State or group of States wishing to study and review their labor laws or their administrative methods," Miss Perkins said. "It will assist them in bringing the laws of the various States into such harmony as similar economic conditions may indicate is feasible."

Secretary Perkins has appointed Mr. Zimmer to represent the U. S. Department of Labor on the ASA Standards Council succeeding Isador Lubin, who has acted as representative of the Department since 1933.

# American Standard Tests for Insulators Are Used on High-Tension Lines

MOST of the insulators used for power lines carrying the billions of kilowatt hours of electricity distributed annually throughout the United States are designed and tested for acceptance under the provisions of the American Standard for Insulator Testing.[1]

The standard is used generally for testing insulators before they are installed in order to assure the high degree of reliability demanded by the requirements for continuous electric service in this country. It describes the methods of making the various tests which are necessary to check the design of pin and suspension insulators and also outlines the routine test which should be made on production runs of insulators, but does not attempt to outline complete insulator specifications.

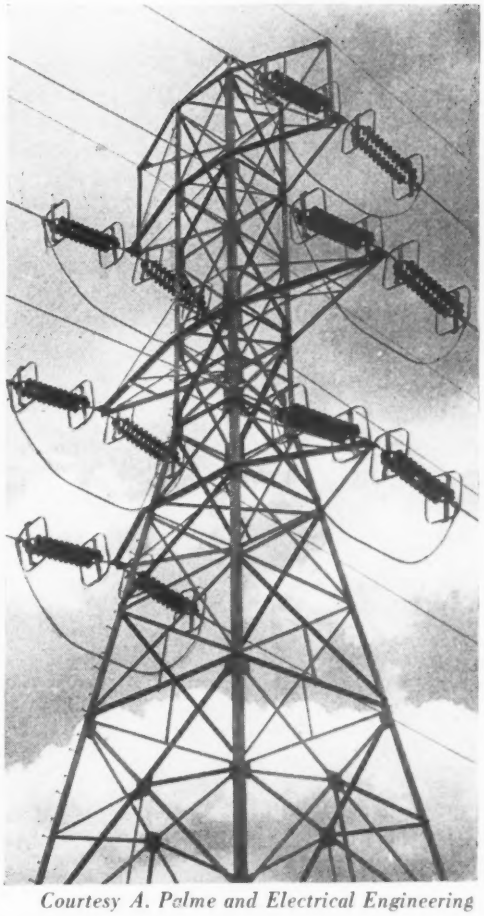
Pin and suspension insulators are tested for dry flashover voltage, wet flashover voltage, puncture voltage, and combined mechanical and electrical strength in accordance with the standard methods.

Pin insulators are rated according to dry flashover and wet flashover voltage expressed in kilovolts and also according to combined mechanical and electrical strength.

In addition to the tests, a discussion of the variation of wet flashover voltage with water resistance and of a method of reducing dry flashover tests to standard humidity is given.

The standard tests have been in use for many years. The present document is a revision of an

[1] C29a-1930.



*Courtesy A. Pelme and Electrical Engineering*

**Safety and economy are co-functions of these American Standard type high-tension insulators, now standard equipment throughout the country.**

The committee to which the A.I.E.E. standard on insulator tests was referred for revision includes representatives of a wide variety of interests, manufacturers and users of insulators. Members of the committee are:

*J. A. Brundige*, Electric Light and Power Group, *Chairman.*

*A. B. Campbell*, Electric Light and Power Group, *Secretary.*

American Ceramic Society, *K. A. Hawley, D. H. Rowland (alt.)*
American Institute of Electrical Engineers, *R. E. Argersinger, H. B. Dwight, F. M. Farmer, C. L. Fortescue, W. W. Lewis*
American Railway Association, Engineering Division, Electrical Section, *G. I. Wright*
American Railway Association, Engineering Division, Signal Section, *G. W. Chappell*
American Transit Association, *H. E. Bachman*
Corning Glass Works, *W. A. Kates*
Electric Light and Power Group, *J. A. Brundige, R. R. Cowles, T. H. Haines, J. Allen Johnson, W. G. Kelley, H. S. Phelps, A. B. Campbell (alt.)*
National Electrical Manufacturers Association, *W. H. Burleson, E. H. Fritz, W. L. Stinson, H. B. Vincent, L. B. Harvey*
U. S. Department of Commerce, Bureau of Standards, *Dr. F. B. Silsbee, P. H. Bates (alt.)*
Member-at-Large, *G. W. Lapp*

The Electrical Standards Committee is sponsoring the work of the committee on insulator tests.

earlier standard developed by the American Institute of Electrical Engineers.

The A.I.E.E. standard was submitted to the American Standards Association and was revised by a committee under the joint leadership of the American Institute of Electrical Engineers and the National Electrical Manufacturers Association.

In 1931, the sponsorship for the work of this committee was placed in the hands of the ASA Electrical Standards Committee.

While the standard continues to be generally satisfactory, numerous suggestions for changes have been made, largely because of advances in the electrical field and increase in the technical knowledge of insulators. It is expected that the sectional committee will meet soon to consider the proposed changes.

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## Standardization of Glass Joints Extended to Cocks and Stoppers

The purpose of Commercial Standard CS 21-34,[1] which has just been issued in printed form, is to provide dimensional requirements for obtaining, within practical limits, interchangeability in ground glass joints, stopcocks, and stoppers for ordinary laboratory and industrial work.

This standard covers: (1) interchangeable ground glass joints from 3 mm to 65 mm for laboratory and industrial glassware; (2) interchangeable straight-bore, ground glass stopcocks from 1 mm to 10 mm bore; (3) interchangeable ground glass stoppers from 8 mm to 35 mm diameters for volumetric flasks, stoppered Erlenmeyer flasks, stoppered cylinders, separatory funnels, and iodine determination flasks; and (4) interchangeable ground glass stoppers from 12.5 mm to 40.3 mm diameters for reagent bottles.

The standard also covers material and construction requirements for standard master plug and ring gages with dimensional tolerances, the required fit of mating gages with reference to each other, and fit of the finished product in working gages. The universal taper for all interchangeable ground glass joints, stopcocks, and stoppers is 1 to 10, the specified length of the ground zone varying with the product. A complete set of master gages is maintained by the industry at the Bureau for reference.

The success of the commercial standard for interchangeable ground glass joints, CS21-30, led the standing committee to extend the principle of interchangeability to stopcocks and stoppers. While the details of the specification have been carefully formulated, they may be considered for a period of time as on trial and subject to revision to suit composite experience. The personnel of the standing committee is given in the printed pamphlet together with a list of acceptors and a brief history of the project.

Interchangeable ground glass joints, stopcocks, and stoppers are identified by the letters "ST" entwined as a symbol on each member, followed by the size number and trade mark of the manufacturer.—*Technical News Bulletin, National Bureau of Standards, November.*

[1] Superintendent of Documents, Government Printing Office, Washington, D. C., or the American Standards Association, 29 West 39th Street, New York, 5 cents.

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## Chamber of Commerce Committee Reports on Consumer Standards

A report on "Standardization of Consumers' Goods" presented by the Domestic Distribution Department Committee to the Chamber of Commerce of the United States says in part:

"The American Standards Association is a federation of many technical societies, trade associations, and government bodies. The chief purpose of the association is to bring together manufacturers, distributors, consumers, technical specialists, and others directly concerned with a particular standardization project; to assure that preponderance of these interests wishes to have a national standard; to bring about the organization of a technical committee composed of official delegates of all important bodies directly interested to formulate the standard; and finally, when such a committee has prepared or selected the standard and given it substantially unanimous approval, and the American Standards Association is definitely assured that the standard represents a real national consensus, to make it an 'American Standard.'"

A general analysis of the present situation on consumer standards and the movement in their behalf, with the conclusions of the committee as submitted to the Chamber of Commerce, is included in the report.

Copies can be obtained through the office of the American Standards Association.

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## Jarecki Company Becomes ASA Member

The Jarecki Manufacturing Company, Erie, Pa., recently became a Company Member of the American Standards Association. The company manufactures pipe fittings, valves, pipe threading machinery, and iron and brass cocks. Through its membership it is entitled to all of the privileges of close contact with both the national and international standards movement.

# Bureau of Standards Program Increases Track-Scale Accuracy

When the testing of railway track scales was undertaken by the National Bureau of Standards in 1914 only about 33 per cent passed the test. In 1933, 80.3 per cent of all railway-owned track scales tested weighed to the desired standard of accuracy. In 1933, also, the mean percentage of error of these track scales was 0.17 per cent, compared with 0.64 per cent in 1914.

The situation at the time the Bureau of Standards undertook the investigation of the accuracy of track scales was particularly complex because there were no accepted specifications or tolerances for these scales. Moreover, maintenance and practice of the various railroads and industrial agencies using track scales were quite diverse, so that differences in weighings between industrial agencies and railroads as well as between different railroads were frequent.

This situation could not be corrected by one of the railroads acting alone, so the National Bureau of Standards initiated its program, which has effected great improvement in the reliability and accuracy of track scales as well as in methods of heavy weighings.

### *Railways Cooperate*

Shortly after the start of the investigation the Bureau commenced to cooperate with various interested agencies in the standardization of this equipment, through the preparation of specifications. On their part, the railways, recognizing the importance of correct weighing, have given intensive consideration to this matter in recent years, through the American Railway Association and the American Railway Engineering Association, as well as individually, and have cooperated with the Bureau in the effort to put weighing on a sound and consistent basis.

In the 20 years during which this program has been effective, the National Bureau of Standards has made some 13,500 tests of track scales, or an average of 675 per year, and in addition has calibrated at least once each year all of the master track scales (now 19 in number) located at widely separated points between the Atlantic and Pacific Coasts. During 1933 the Bureau's three scale test cars covered 23,000 miles on 87 railways, in making tests of 864 track scales in 39 states.

The Bureau now operates a master track scale at Clearing, Illinois (Chicago), for standardizing the heavy weights which it uses for calibrating the master scales and track scales used by the railways and other agencies, and also those used by railroads in testing their own equipment. During 1933, 28 cars owned by 13 railways received 43 standardization tests on the Bureau scale. Frequency of tests for these cars ranged from 3 to 42 months.

### *Master Scales Test Cars Regularly*

The method of maintaining accuracy of track scales is regular testing with scale test cars. One hundred and thirty of these cars are regularly tested over master scales and are in constant service testing track scales in all parts of the country. Some of these scale-test cars pass over the Bureau's master standard scale at Clearing.

In the United States, it is estimated that there are now about 8,500 track scales used in regular service. Of these about 40 per cent are railway owned and the balance are the property of various industries. The generally accepted tolerance and the one upon which scales are classified by the National Bureau of Standards as correct or incorrect is substantially an error not to exceed 0.2 per cent of the applied load, or 4 lb per ton. This tolerance is maintained for scales intended for weighing all commodities except grain, on which, in accordance with special recommendations of the Interstate Commerce Commission, the tolerance is only 0.1 per cent.

This regulation of the Interstate Commerce Commission has been enacted to insure a particularly high grade of weighing performance for grain, and is one that is not easily met, because many of the grain scales used are not modern in design. However, vigilant attention on the part of agencies which supervise the weighing of grain has resulted in a particularly good record in this important service.

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## Powell Company Joins ASA Roster

The Wm. Powell Company, Cincinnati, has joined the American Standards Association and is entitled to all of the publications, library, and information services given by the ASA to its Company Members.

# Portable Lamps Specifications Assure Better Illumination

by

**D. W. Atwater,**

*General Secretary,*[1] *Illuminating Engineering Society*

## Illuminating Engineering Society Prepares Requirements for Floor and Table Lamps

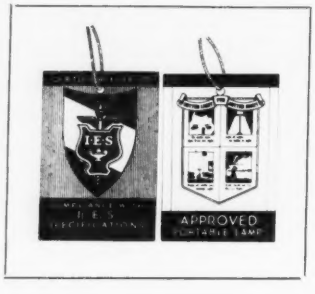
## Sale of 500,000 Certified Lamps Is Estimated for Year, as 32 Manufacturers are Making Table and Floor Types Under Agreement

REALIZING that about 40 percent of college students in America have defective eyes, the Illuminating Engineering Society decided to investigate. A nation-wide survey was conducted. The results showed that the lighting conditions in dormitories, fraternity houses, and the "dining room" study halls as well, were, as a rule, improper and, in most instances, far below the standards of recommended practice.

Where adequate illumination of suitable quality should have existed to protect the eyes of students, particularly school children during the years when their eyes are most vulnerable, actual facilities were scarcely more effective than the "midnight oil" of yore.

To remedy this situation, the I.E.S., early last spring, announced specifications covering a study and reading lamp. This activity was initiated by the Industrial and School Lighting Committee, under the chairmanship of Prof. H. B. Dates of the Case School of Applied Science, Cleveland.

Briefly, the lamp was designed to provide adequate and comfortable illumination, economically and efficiently. In the customary manner, a shade covers the light source but herein lies the difference which constitutes the advantage over past designs. The light source is in an inverted opal glass bowl, allowing downward direct light and upward indirect illumination. The shade is wide at the bottom and stands higher than usual to permit a wide distribution of the direct light on the desk proper. The high reflection factor of the inner surface of the shade contributes materially to the resultant illumination.




The indirect illumination performs a particularly desirable function in removing the dark shadows throughout the room, a common condition with the familiar "goose-neck" style of desk lamp. Culminating these improvements, the specifications call for minimum values of illumination on the desk or table top. Customers can now know they are buying a lamp that will produce lighting of a definite, prescribed quantity.

### *Laboratories Making Tests*

The Electrical Testing Laboratories of New York City, and recently the Hydro-Electric Power Commission of Ontario, have been authorized to test all lamps designed in compliance with the specifications and to issue tags certifying that the manufacturer's equipment has met the Society's requirements. To date, 32 manufacturers are making the Study and Reading Lamp in accordance with the specifications. The certification tag displays a monogram of the I.E.S. and the insignia of the National Better Light—Better Sight Bureau.

During September and October, more than 100,000 certified study and reading lamps have been sold, and 400,000 more sales are anticipated before the end of the year. Manufacturers generally recognize that the high-quality illumination produced is responsible for the tremendous public acceptance

[1] Manager, Commercial Engineering Department, Westinghouse Lamp Company, Bloomfield, N. J.

of this I.E.S. certified type of portable lamp.

### *Indirect Floor Lamps*

The gratifying response to this standardization move naturally suggested an extension of the policy. Portable lamps, because of their popularity and suitability in the home, are used for seeing purposes for longer periods than any other source of light. In this group, the indirect portable, by virtue of its good quality of light, is destined to play an important part in the promotion of better sight through better light. Consequently, this particular lamp was selected next for standardization.

The efficiency of so-called "reflector" lamps, previously available, was pitifully low, a fact generally unknown even to those in the lighting field. No one in particular was to blame. It was simply that no one had ever known such conditions to exist. In 1933, however, a series of photometric tests disclosed the alarming fact that many of the designs on the market were only half as efficient as they might be.

Specifically, it was found that the reflected contour and the lamp shape were barriers in the path to higher efficiency. The familiar "morning glory" type of reflector and the standard PS lamp bulb created a condition that trapped too much useful light.

With these facts to work on, the I.E.S. felt obligated to alleviate such conditions. Accordingly, specifications were established and manufacturers who have since met the requirements are privileged to display the certification tag on portable floor lamps in addition to the study and reading lamps. A customer may now feel assured of getting the best that money can buy in point of lighting performance.

### *Assures Adequate Illumination*

As the specifications say, the primary object is "to assure lighting equipment which, when properly installed under the conditions for which it is intended, will render good service by providing convenient and effective illumination with conservation of eyesight and enhanced decorative qualities, and will render this service over a reasonable period of time."

In the case of the study lamp, the wattage limitations, because of inadequate wiring in many colleges and universities, necessitated an extremely efficient unit which would operate satisfactorily with a 100 watt lamp. Either a table or floor model is permissible so long as it illuminates the study table or reading chair and also sends an appreciable amount of general illumination throughout the room.

With intensities of 40, 30, 20, and 10 footcandles specified for respective distances of 6, 12, 18, and 24 inches from the base of the lamp, adequate downward light is available on the desk top. The light must also be diffused well. Both direct and reflected glare are practically eliminated. These features of design make this lamp perhaps the most ideal light ever developed for reading and writing.

**I.E.S. specifications for portable lamps place no restriction on decorative design. While assuring definite lighting performance, the requirement of a wider shade, at a greater height than usual, promises a new style in portable lamps.**

In the indirect floor lamp covered by the I.E.S. specifications, all of the light must be directed to the ceiling which acts as a reflector to provide good general illumination for such pastimes as card playing, ping-pong, and other parlor games. To meet these specifications, the lamp must produce 10 footcandles on a horizontal plane 30 inches from the floor and at a distance of 4 ft from the lamp.

Semi-indirect floor lamps complying with the requirements of the Society, are designed to sup-

**The study and reading lamp has the light source in an opal glass bowl, providing direct light downward and indirect light upward. Adequate light is distributed on the desk top, while indirect illumination removes the shadows around the room.**

ply adequate light for reading, writing, or sewing as well as all classes of tiring visual work. In addition to the indirect illumination, they must provide downward light with resulting intensities of 40 foot-candles at 12 inches from the lamp, 20 ft-c at 24 in. and 14 ft-c at 36 in., all in a plane 30 in. above the floor. Twelve manufacturers are now making semi-indirect floor lamps in accordance with the I.E.S. specifications.

### *Increase Efficiency 25 Per Cent*

In view of the fact that the specifications are intended to insure satisfactory, as well as economical, illumination, each of the three designs covered by the I.E.S. requirements must have an efficiency of not less than 75 per cent of the light output of the bare lamp. While this efficiency represents an increase of 25 per cent over the best equipment formerly on the market, it can be obtained by careful and intelligent design.

A fundamental principle of the two floor lamps calls for either the 250-watt Indirect-Lite lamp or the 100-200-300 watt Indirect Three-Lite lamp. Besides operating more satisfactorily in a base down position, these bulbs possess a novelty that stimulates acceptance of the portable lamps.

To assure the ultimate user a safe and durable product in addition to an efficient lighting unit,

## Illuminating Engineers Who Specified New Lamp

These men have been in charge of preparing the specifications, supervising their operation and modifying them from time to time as required:

*R. B. Brown, Jr.*, EDISON ELECTRIC ILLUMINATING COMPANY, BOSTON, *Chairman.*

*D. W. Atwater*, WESTINGHOUSE LAMP COMPANY.

*E. W. Commery*, GENERAL ELECTRIC COMPANY.

*L. C. Doane*, THE MILLER COMPANY.

*W. F. Little*, ELECTRICAL TESTING LABORATORIES.

## Controllable Light Source Found Boon to Weak Eyes

For years eye specialists have prescribed near-vision glasses only to find a large portion of their patients returning with complaints about their difficulty in seeing with the new glasses. Seldom could the complaints be removed, as repeated tests proved the eye correction had been right.

In cooperation with optical specialists there has now been developed a controllable light source with a constant field of 2 to 200 ft-candles without change of color temperature and having an attachment for securing approximate daylight from "Mazda" lamps.

Supplementing this is an examination kit composed of a special "sight meter" and a series of visual tasks so that eyesight specialists can select that which most nearly duplicates the patient's average needs.

After the minimum lighting requirements of the patient, based on his average seeing task, is determined by the specialist, he provides the patient with a special form on which are noted the minimum intensities under which he should work with comfort and safety. A simple means of checking his lighting conditions is also provided the patient.

When light is prescribed in this way, we may expect 20,000 eye specialists recommending what persons directly interested in lighting equipment or electricity have claimed before but who have seldom been heeded. But when a person has his optical specialist tell him certain illumination conditions are essential to his eye comfort, safety and physical, mental and psychological well-being he is going to believe it.—*Electrical World, October 13.*

construction requirements call for the best of equipment accessories. A relatively few manufacturers have always used the best of materials so that meeting I.E.S. requirements was an easy matter. Others found that sockets, switches, and cords which comply with the specifications and give satisfactory service were no more expensive than parts they were previously using.

In several of the lamps submitted for test, it was necessary to substitute better switches or sockets; in others, to change the cord. However, the cooperation of the manufacturers and their willingness to accept constructive suggestions and improve their product has been most gratifying. As a result of the high requirements for construction materials, portable lamps have been elevated to a higher plane of quality.

### *Appearance Matter of Choice*

Providing a lamp fulfills the primary requirements of illumination efficiency, there is no limitation on the shape and size of the shade. Some of the original lamps have perhaps seemed unattractive in appearance, arousing slight criticism on that score. Yet, beauty need not be sacrificed for efficiency. The wide variety of well-designed lamps, now available with certification tags, attests this freedom.

The preparation of specifications governing the design and operation of portable lamps was an innovation for the Illuminating Engineering Society.

The movement, however, points to a new permanent style in portable lamps. For too long, we have been reverting to oil lamps, candle sticks, lanterns, and whatnot of colonial and prehistoric style for our light source fashions. As a result we have suffered loss of utilitarian light for that of a decorative character. The new lamps consider efficient operation first, then go on to give decoration full sway in the design. The better lighting equipment will safeguard the vision of the public and serve to build up a greater respect for the electrical industry.

## German Societies Issue Standard for Testing Fuel

New specifications were recently developed and published in Germany for testing solid fuels, particularly coal and lignite.

Detailed instructions for sampling coal and reduction of the samples to laboratory sizes for analysis to determine the heat content of the coal are presented at length. The standard requires the use of the Berthelot-Mahler type of bomb calorimeter when accurate results are needed.

For determining the moisture content of coal and lignite, stress is laid upon the procedures to be followed in handling the samples in the laboratory measurements. The so-called "xylol" method is recommended for all fuels that are sensitive to air-drying, particularly sub-bituminous coal, lignite, peat, and wood.

Methods for determination of the fixed and volatile sulphur, fixed carbon, and volatile content are given in detail.

The revised standards were developed cooperatively by the Central Association of German Coal Merchants, German Association for the Testing of Materials, and the Mining Technical Standards Committee, and were published by Beuth-Verlag, Berlin.

## Iron and Steel Institute Names Council Members

L. S. Marsh, Inland Steel Company; J. O. Leach, Carnegie Steel Company; and Earl Smith, Republic Steel Corporation have been named by the American Iron and Steel Institute to act as its representatives on the Standards Council of the American Standards Association.

Alternate members on the Council are G. A. Reinhardt, Youngstown Sheet and Tube Company; J. J. Shuman, Jones and Laughlin Steel Corporation; and E. F. Lundeen, American Rolling Mill Company.

All of these steel technologists are actively engaged in standardization work conducted by the Association of Steel Manufacturers Technical Committees, the American Society for Testing Materials, and other organizations, as well as the American Iron and Steel Institute.

Mr. Marsh is chairman of the technical committee of the Institute. He is also serving as the representative on the Standards Council of the Association of Steel Manufacturers Technical Committees. Mr. Leech is alternate representative of the Association of Steel Manufacturers Technical Committees on the Council.

Mr. Smith, Mr. Reinhardt, Mr. Shuman, and Mr. Lundeen are all active in the work of standards committees of the American Standards Association.

## Organize Standardizing Committee in Spain

The Permanent Committee for Testing Materials and Industrial Standardization, a national standardizing body, has been organized in Spain. Cesar Serrano, Department of Industry and Commerce, Madrid, is President. The new standardizing body has expressed a wish to become a member of the International Standards Association.

## British Revise Standard Refractory Specifications

The importance of high-grade refractories to the British gas industry has been emphasized through recent revisions of the standard specifications for these materials. The specifications were prepared by the Refractory Materials Joint Subcommittee of the Institution of Gas Engineers and the Society of British Gas Industries, together with representatives of the British Refractories Research Association.

The new specifications are divided into sections on bricks, blocks, and tiles, and other shapes, in three ranges, those containing more than 95 per cent silica, those containing between 78 and 92 per cent silica, and those containing less than 78 per cent silica usually made from fireclay.

More importance is attached in these new specifications to proper kiln firing of the bricks and some considerations have been made in the originally exacting requirements for refractories. The temperature for the after-expansion test of the silica bricks has been raised from 1410 deg C to 1450 and stricter limits have been set up for permissible variations in the specified dimensions for all classes of products.

The specifications are given in detail in the August 22 issue of *Gas Journal* (London).

## Standardize Glasses Used For Grading Vegetable Oils

Inconsistencies in the grades of Lovibond red glasses have long been a source of annoyance and dispute among oil chemists, who use these glasses in the color grading of vegetable oils. Thousands of such glasses are in use in this country, over 2,300 of them having now been submitted to the Bureau for renumbering.

Research Paper 718 in the October number of the *Journal of Research* of the National Bureau of Standards describes the fundamental standardization of the Bureau's Lovibond red glasses, with which these 2,300 glasses have been compared and in terms of which they have been renumbered.

The purpose of the standardization was to derive new numerals for the Bureau glasses, approximately equal in magnitude to the original numerals but free from certain inconsistencies occurring among them. The standardization is based upon spectrophotometric analyses of the glasses when in combination with Lovibond 35 Yellow.

The new numerals were derived from colorimetric computations based on the spectral transmission data. They are shown to be on a consistent additive scale which covers a range from yellow to yellowish-red. Tolerances of colorimetric purity and light transmission are considered.—*Technical News Bulletin, National Bureau of Standards, October, 1934.*

## Propose Simplified Practice For Firebox Heating Boilers

A proposed simplified practice recommendation covering steel horizontal firebox heating boilers has been mailed to all interests in the industry by the Division of Simplified Practice of the National Bureau of Standards for their consideration and written approval.

The recommendation lists 19 sizes of boilers ranging from 1,800 to 35,000 square feet of steam radiation and from 2,880 to 56,000 square feet of water radiation for hand firing. Nineteen ratings are also given for these boilers mechanically fired ranging from 2,190 to 42,500 square feet of steam radiation and from 3,500 to 68,000 square feet of water radiation. The recommendation also includes heating surface and grate area for each size of boiler. Other information includes furnace volume for oil, gas fired, or bituminous-coal stoker-fired boilers, together with size of outlets and number and size of safety valves.

The recommendation, if approved by the industry, will be issued as Simplified Practice Recommendation R 157 and will be effective from July 1, 1935.

### Refractories Committee Considers New Standards

A new standard method of testing refractories to determine linear change after being heated and held at 1400 deg C for five hours was considered at a recent meeting of the American Society for Testing Materials Committee on Refractories.

Extensive revisions of A.S.T.M. specifications for malleable furnace brick and boiler furnace brick, which it is expected will replace present A.S.T.M. specifications C 63-28 and C 64-28, were also discussed.

## Standardized Floor Materials Being Manufactured in England

A plant for producing highly standardized asphalt and flooring materials by a new process is being erected at Hebburn-on-Tyne, England.

The new plant, which is the result of many years of research, includes the latest thermo-electric heat-recording apparatus, which will produce the standard asphalt and flooring materials under rigid scientific control.

# Coal Technical Groups Report on Standard Tests

Meetings of the technical committees on Coal Classification and on Nomenclature of the sectional committee on Classification of Coals were held at State College, Pa., on October 17 and 18 in conjunction with the fall meeting of the Coal Division of the American Institute of Mining and Metallurgical Engineers.

Much of the discussion of the technical committees was concerned with questions of nomenclature and possible new limits as boundary lines in the low volatile and medium volatile bituminous coal groups which have arisen since the tentative standards for Classification of Coals were published by the American Society for Testing Materials some months back.

The Technical Committee on Coal Classification authorized further work to develop methods of test for evaluating various factors necessary for use classifications of coal.

Subcommittee VII on Defining Coal Sizes and Coal Friability reported progress in the development of a screen test method for bituminous coal and indicated that certain changes had recently been made in a draft circulated late in the summer. Reports of a very thorough investigation of friability tests on coal were announced. These may serve as a basis for the development of criteria for the factor of friability.

Further consideration of some of these questions will take place before the next meeting of the sectional committee and its various affiliated groups which is scheduled for New York in February in connection with the annual winter meeting of the American Institute of Mining and Metallurgical Engineers.

Should agreement be reached on the proposed method for screen analysis for bituminous coal, a third proposed standard of the sectional committee may be offered to the American Society for Testing Materials for publication as tentative.

A uniform method for screen testing of bituminous coal would have immediate application in determining conformance of shipments of bituminous coal with the various sizes laid down in the schedules of the Divisional Code Authorities of the Bituminous Coal Industry.

The American Society for Testing Materials, which is sponsoring this project, published two tentative standards developed by this sectional committee in the spring of 1934. These were Tentative Specifications for Classifications of Coals by Rank (A.S.T.M. D 388-34 T) and Tentative Specifications for Classification of Coals by Grade (A.S.T.M. D 389-34 T). These appear in condensed form on pages 66, 67, and 68 of the April issue of INDUSTRIAL STANDARDIZATION AND COMMERCIAL STANDARDS MONTHLY and appear in full on pages 67 and 74 of A.S.T.M. Standards on Coal and Coke.

**Members of the Technical Committee on Nomenclature who attended the meeting of the committee are:**

A. C. Fieldner, Experiment Stations Division, U. S. Bureau of Mines, *Acting Chairman*; George H. Ashley, State Geologist, Topographical and Geological Survey Commission, Harrisburg, Pa.; H. N. Eavenson, President, Clover Splint Coal Co., Pittsburgh; A. C. Fieldner, U. S. Bureau of Mines, Washington; T. W. Harris, Jr., Division Purchasing Agent, E. I. duPont de Nemours & Company, Wilmington; T. A. Hendricks, Assistant Geologist, U. S. Geological Survey, Washington; F. H. Reed, Head, Chemical Section, Illinois Geological Survey, Urbana; H. J. Rose, Senior Industrial Fellow, Mellon Institute, Pittsburgh.

**Thirty-five other coal technicians attended the session.**

**The following members of the Technical Committee on Coal Classification were present at the committee meeting:**

H. J. Rose, Senior Industrial Fellow, Mellon Institute, Pittsburgh, *Chairman;* George H. Ashley, State Geologist, Topographical and Geological Survey Commission, Harrisburg; S. P. Burke, Graduate Council, University of West Virginia, Morgantown; G. H. Cady, Senior Geologist, Illinois Geological Survey, Urbana; H. N. Eavenson, President, Clover Splint Coal Company, Pittsburgh; R. E. Gilmore, Superintendent, Fuel Research Laboratories, Department of Mines, Ottawa, Ontario; T. W. Harris, Jr., Division Purchasing Agent, E. I. duPont de Nemours & Co., Wilmington; T. A. Hendricks, Assistant Geologist, U. S. Geological Survey, Washington; H. H. Lowry, Director, Coal Research Laboratory, Carnegie Institute of Technology, Pittsburgh; Malcolm Macfarlane, Harrisburg, Illinois; O. O. Malleis; J. B. Morrow, Pittsburgh Coal Company, Pittsburgh; E. W. Parker, Secretary, Anthracite Institute, Primos, Pa.; W. A. Selvig, Chemist, Pittsburgh Experiment Station, U. S. Bureau of Mines, Pittsburgh; Taisia Stadnichenko, Associate Geologist, U. S. Geological Survey, Washington; R. Thiessen, Research Chemist, Pittsburgh Experiment Station, U. S. Bureau of Mines, Pittsburgh; and H. G. Turner, Pennsylvania State College, State College, Pa.

**Eighteen other technicians interested in coal classification were present at the technical committee meeting.**

# Use of Safety Equipment Encourages Caution Habit[1]

by
**John Campbell**

*Director, Bureau of Inspection,*
*Pennsylvania Department of Labor and Industry*

SAFETY devices naturally fall into either one of two classes: those which are attached to the machine itself and those which are worn by the person operating the machine.

Safety devices in the shop have an almost incalculable visual value to employees. The very sight of guards brings to their minds the thought of the employer's backing and willingness to prevent accidents wherever possible.

The employee cannot see any proof of money spent by his employer when it is expended for oral safety directions, meetings of committees or engineers; but the presence of the employer's interest is visibly shown in every safeguard used in a shop.

Again there is an added gain in the mental reaction of those employed in a well guarded shop. To illustrate, we are prone to be careless in our personal habits if we work or frequent a carelessly kept workroom or office. Unconsciously our surroundings do influence our personal actions daily. We do not mind throwing a cigarette butt or a match on the floor of a dirty room or office, but we hesitate twice before doing so on the floor of a scrupulously clean and well kept room.

I believe that in a well guarded shop, the moral and mental stimulant to be a safe worker is greatly accentuated due to guarding and that we can expect the workers to react by conducting themselves as safe workmen.

Some shops have adopted the practice of painting the guards a striking color in order that they may be an outstanding reminder of safety to their employees. This is a procedure which should be encouraged as it brings home to the employee the fact that money is being spent for their protection.

There are no figures available that I can find and nothing can be compiled that is absolutely trustworthy which will show the number of injuries that have been prevented, or lives that have been saved, because certain safety devices have been used. This is due probably to the fact that safety devices were used before the States began to compile statistics in the minute way that is being done today.

The statement that four per cent of all accidents are due to unguarded machines is not indicative of the actual potential hazards of machines. This four per cent represents accidents that happen on unguarded machines. There are, however, many more machines properly guarded than unguarded and there is no sure basis for calculating the number of accidents prevented on those machines that are properly guarded.

### *Devices Prove Value*

There are plenty of instances, however, where proof can be obtained as to the value of safety devices in accident prevention. A short time ago a road-building project was completed in Pennsylvania. Although it lasted only a few weeks,

[1] Abstract of address delivered before the National Safety Congress, Cleveland.

## ASA Has Approved 44 National Safety Codes

**Forty-four national safety codes, providing specifications for safety devices, and for safe operation and use of equipment, have been approved by the American Standards Association.**

**Widely representative committees made up of machinery manufacturers, insurance interests, factory managers and owners, safety experts and governmental officials agreed upon the codes before they were approved as national standards.**

**Eighteen other safety codes are now being worked out by similar committees, and when completed they will be submitted to the American Standards Association for approval as national codes.**

### Uniform Specifications for Safety Devices Are Urged

Specifications for safety devices should be uniform in so far as it is possible.

There is no reason why one State should require 55,000 pounds tensile strength in a window cleaning device and another State should require 60,000 pounds tensile strength. If 55,000 pounds tensile strength is safe for a man's life in one State, it should be safe for a man's life in all States.

Manufacturers of safety equipment should see to it that the States adopt a uniform standard in safety equipment. In this way, orders placed in the factory for special equipment would be eliminated and the manufacturer could make a standard product that would be usable and approvable in all States.—*John Campbell.*

during that time 36 pairs of goggles worn by the workmen were broken. Had these goggles not been worn, there is no question but that 36 persons would have had eye injuries resulting, probably, in loss of eyes to some of them.

At the Greater New York Safety Congress held last winter, statistics were printed and circulated to the effect that the loss of an eye entailed a monetary loss of approximately $12,000. In this particular instance, the use of 36 pairs of goggles meant a saving in money alone of some $432,000.

In the olden days the operator of a mill expected accidents just as surely as he expected breakdowns in his machinery. The situation is different now, however, for an accident in a mill means an investigation as to its cause, a rigid inquiry into somebody's carelessness, and in most cases, a punishment for the men in charge of the operation because of the accident. All we need to do to size up the value of safety devices is to imagine what industry would be like if all our safety devices and safe practices were abolished and manufacturing plants returned to their former state of years ago.

A great deal of progress has been made in designing safety devices, but the job is never complete. New products, new processes, and new machines are constantly being developed. Each new product or process may require the development of a safety device to eliminate a new hazard. Again the tremendous progress being made in the elimination of health hazards has opened up an entirely new field for use of safety devices. Fortunately, the manufacturers of safety devices for protection against health hazards have kept pace with the development of the hazard so that there is no need to compel men to work in places or under conditions where adequate protection cannot be given them.

## American Standard Recommends Simplified Binders' Board Sizes

The Division of Simplified Practice of the National Bureau of Standards has announced that Simplified Practice Recommendation R81-28 covering Binder's Board used by the bookbinding industry has been reaffirmed by the standing committee of the industry without change.

The ten sizes listed in the simplified schedule, which range from 20 x 30 in. to 31 x 41 in., are the standard sizes recommended in the Commercial Standard for Binders Board for Bookbinding and Other Purposes (CS 50-34). This Commercial Standard has just been approved by the American Standards Association as American Standard.

Copies of the Recommendation are available from the Superintendent of Documents, Government Printing Office, Washington, D. C., or from the office of the American Standards Association at five cents each.

## Kellogg Company Joins Standards Association

M. W. Kellogg Company, New York, has become a Company Member of the American Standards Association. The company manufactures welded, special steel products, oil stills, tanks, and receptacles for oil, chemical, paper, and affiliated industries, penstocks for hydro-electric projects, and supervises and installs high and low pressure piping and other products for power plants, oil refineries, etc.

## Simplify Size List For Truck Tires

The Simplified Practice Recommendation for industrial truck and trailer tires, cured-on type, became effective November 1. It was accorded the required degree of written approval by the industry.

This simplified schedule of sizes will be included in the current revision of Simplified Practice Recommendation R103-33, which applies to industrial truck and trailer tires of the pressed-on type and which became effective June 1.

## Steel Construction Manual Adds New Standard Series

A revised edition of the *Steel Construction Manual* published by the American Institute of Steel Construction brings the *Manual* up-to-date and includes details and allowable loads for a revised and completely standardized series of wide flange sections recently announced by the mills.

Data frequently referred to by structural estimators and designers, including dimensions, weights, properties, and other measurements used for rolled steel structural sections, for rolling mill practice, and for designing and estimating, and data frequently required in making shop drawings are published in the form of tables.

The unit stresses permitted by the American Institute of Steel Construction's Standard Specification on the Design, Fabrication, and Erection of Structural Steel for Buildings are used as the basis for tables showing allowable loads under certain stipulated conditions.

All the standard specifications and codes commonly employed in structural steel work are assembled and published in this book.

The book is $2.00 a copy and can be purchased or borrowed from the American Standards Association Library.

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## New Zealand Gains In Standards Program

The New Zealand Standards Institution reports among the more important projects now in progress the preparation of a national Building Code, a series of specifications for materials for roads, raw materials for paints, and galvanized iron products.

During the past year the Institution reports an increase in member-bodies, and in the number of technical committes at work. Forty-three British Standard Specifications have been endorsed as New Zealand standards, 23 of which are also Australian Standards.

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## Simplification Covers Cupola Refractories

Simplified Practice Recommendation R154-34 covering cupola refractories is now available in printed form. This recommendation, proposed and formulated by the industry, contains a simplified list of sizes for cupola blocks, tap-out blocks, and slag hole blocks.

There are five tables in the recommendation, as follows: Table I—9 in. x 6 in. x 4 in. cupola blocks; Table II—9 in. x 4½ in. x 4 in. cupola blocks; Table III—two hole tap-out blocks; Table IV—one hole tap-out blocks; and Table V—slag hole blocks.

The recommendation represents a substantial reduction in the variety heretofore listed for regular stock purposes, especially for tap-out, and slag hole blocks.

The printed edition of the recommendation also contains a summary of the development of the project, the membership of the industry's standing committee, and a list of the associations and firms that have accepted the program.

Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., or from the American Standards Association office at five cents each.

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## Standard for Testing Fabrics Now on Sale

Printed copies of the revised American Standard for General Methods of Testing Woven Textile Fabrics are now ready for distribution and can be obtained from the American Society for Testing Materials, 260 South Broad Street, Philadelphia, or from the American Standards Association. Copies are 25 cents each. Members of the American Standards Association are entitled to a 20 per cent discount when ordering through the ASA office.

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## Safety Glass Statute In Force in Michigan

To conform to the Michigan law which went into effect July 1 requiring that all cars manufactured after that date be equipped with safety glass, car manufacturers generally are following the policy of adding safety glass as an extra cost item to be tacked on the price of cars intended for the Michigan market. Most cars in dealers' hands have safety glass only in windshields and wings, but they are not affected by the law since they were produced prior to the effective date of the statute.—*Automotive Industries, July 7.*

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## Size of Dental Plaster Packages Simplified

Simplified Practice Recommendation R 117-30 covering package sizes of dental plaster, investment, and artificial stone has been reaffirmed, without change, by the standing committee of the industry. The recommendation lists package sizes ranging from 3 to 200 pounds.

# Consumers Lose Confidence in Brands Because of Lack of Quality Standards[1]

by

**Ruth O'Brien**

*Chief, Division of Textiles and Clothing*
*Bureau of Home Economics*
*U. S. Department of Agriculture*

## *Consumer Ignorance Drives Superior Goods Off Market; Inferior Goods Substituted*

IS THERE not plenty of justification for lack of consumer confidence in present-day merchandise and merchandising methods?

Suppose a consumer really wants to buy a household blanket for a reasonable but limited sum. First, he reads the advertisements in the magazines. There he learns the names of the various manufacturers and brands; he sees many general, non-informative words but no essential facts concerning the qualities of blankets.

Perhaps he reads the advertisements in the newspapers, also. There he learns the price of the blankets offered by various stores. He may find a line or two saying "all wool" or "part wool," and perhaps giving the size. But the things played up in black, bold-faced capital letters are such unenlightening flights of fancy as "Fluffy and soft as a summer zephyr." He learns nothing more when he interviews the clerk or even the buyer. No information whatsoever is forthcoming about the wearing qualities of the blankets.

The advice the consumer most often hears is "Buy from a reputable store." Granted that following such advice will eliminate the poorest qualities at the lower end of the quality scale; granted that he would have no disappointment as to quality if he could pay that extra price which characterizes the top of the city's list of stores, the one catering to the city's wealthiest, the stores whose prices are beyond the reach of most of us. Granting both of these facts, we still should consider whether any store is "reputable" in the sense we are discussing now; that is, in the sense that the customer will always get the quality most satisfactory to him at the most reasonable, socially just price. In the "reputable" stores there are many grades of merchandise at many different prices. The price is often no measure of the quality. The store does not assist in choosing. Neither can nor does such a store refund the purchase price for all merchandise which fails.

As a result of this lack of quality guides, we have placed the consumer in a position where he must of necessity dissipate his income, because he is constantly expending it by guess.

And what is more, as we see it, these so-called clever salesmanship tactics and this lack of information have resulted in a consumer skepticism today about all merchandising and all goods. The only way I know to meet the situation is by a definite right-about-face on merchandising policies. First, we need emphasis on making the best quality that can be sold in various price ranges to meet various pocketbooks. Second, we need to tell the customer definite, truthful facts about the quality of the goods in these different ranges. We can do this through advertisements and informative labels.

### *Time Ripe for Change*

The time is undoubtedly ripe right now for such a change in merchandising methods. When money is easy, people may enjoy being entertained by cleverness and by antics of salesmanship. But hard times and rising prices put us all in a very different frame of mind. What amused us before, irritates and antagonizes us now. It happens that our staff hears the plain, outspoken comments of rural women as they come to farm conferences. We hear the discussions of clubs and study groups—and by the way, study groups on consumers' problems are increasing rapidly. Merchandising groups hear little of this and few know what is going on.

### *Demand Information*

Have you ever watched a woman customer ask a few intelligent pointed questions, and listen to

[1] Abstract of address given at the Boston Conference on Distribution, September 25.

the barrage of sales talk given her by the clerk, none of which gives her the facts she is asking for? She seldom argues or tells him how little she respects his meaningless talk.

She does the most eloquent thing in the world. She silently walks out.

She has been walking out by the thousands in the last few years.

And she talks when she gets out—in fact, she broadcasts her opinions among her neighbors and at her next bridge club. Too many merchants never hear her. They are too convinced that old ways of merchandising are the only ways, that the customer is unintelligent and will continue to hand out her income freely when so treated.

There are hundreds of studies being made by consumer groups right now in important centers and broadcast by organizations of tremendous influence. For example, it is extremely unfortunate when a group of homemakers, all college women, has an experience like the following which it published in the *Journal of Home Economics*, the magazine of a professional women's organization with ten thousand members. This group attempted to get some definite information concerning the common household articles their members buy and they write as follows:

> "In the case of sheets, it was found that the clerks at the local stores could give little or no information regarding tensile strength and thread count of the fabric used . . . price was by no means a guide to the wise buying of sheets. Letters were written to the manufacturers asking for data on thread count and tensile strength; the replies may be roughly divided into four types:
>
> 1. Complete evasion of the question asked.
> 2. Assurance that any article sold under the manufacturer's trade-mark would give complete satisfaction.
> 3. Assurance that the sheet had been laboratory tested but that information could not be given.
> 4. One respectful reply giving laboratory data."

The statement concludes with this:

"As a result of these replies, the women have become wary of trade-marks. They also felt that any manufacturer who had helpful laboratory data and refused to give them on request was a hindrance to wise buying and should be avoided."

There are many ways of giving definite facts concerning merchandise to consumers. Some commodities lend themselves to quality grading systems and the simplest and easiest way of helping the customer to a satisfactory selection is to set up first, specifications for each grade, and second, a system of nomenclature which can be used on the label as a designation of grade. Such a system used on canned foods has worked in wholesale markets.

In Canada, where grade labeling of such goods is compulsory in the retail trade, it works in consumer dealing, even (strangely enough) on products canned by American companies. The hesitancy and, in some quarters, the aggressive antagonism to grade labeling in this country is difficult to understand.

### *Dogs, Not Humans, Protected*

One of the amusing high-lights of code making came to light in this connection. At the hearings on the code of the canned dog food industry the need of quality standards and grade labeling on dog food was very easily impressed on all concerned. One of the paragraphs reads: "The Code Authority shall establish reasonable definitions and reasonable standards of identity and biological value for canned dog food, necessary to prevent deception, fraud and unfair competition in the sale of canned dog food. Within 90 days after the date when this Code becomes effective the Code Authority shall present to the Administrator recommended standards and a plan for their enforcement."

Very different was the outcome of the hearings on the code for the industry which cans food for humans. Although representatives of twenty-one consumer groups testified to the need and desire of such labeling, a very solid front of opposition was put up by the industry and the accomplishments in this direction are as yet very meager. Fido is to be protected by grade labels on his canned food but not Fido's owner!

Incidentally, 21 consumer representatives were quite an array when we consider how very poorly organized and inarticulate the consumer is.

### *Packaging Makes Labels Necessary*

Why should one honest, intelligent human being expect another intelligent human being to buy a produce sight unseen, hidden in a can, a package, or behind a veil of cellophane with no indication whatsoever of its quality on the outside of the package?

What would a so-called hard-headed business man do if asked to contract for a few hundred tons of steel rails, on the basis of no specifications, no tests, nothing except a romantic description such as Pride Supreme or Gleaming Moonbeams? Can you imagine the fantastic advertising in the popular magazines transplanted into the pages of an industrial journal? Can you imagine the same sales tactics used in selling turbo-electric generators as are used in selling household refrigerators?

The arguments against quality grading seem to center on the idea that only the A grades would find a market. Our experience is that consumers do not always want an A grade. They are well aware that their pocketbooks cannot stand the strain of always buying the best quality.

They want to know the characteristics of all the different qualities so that they can choose wisely for the particular use to which the good is to be put. They are well aware that they are not always getting A grade now. The irritating thing is that they cannot know that they are getting it when for some special purpose they desire and are willing to pay for the A grade. They do not wish to pay an "A" price for a C grade.

Every housewife knows that she does not want the heaviest syrup for all purposes on her canned fruits. Everyone recognizes that it does not pay to buy large, whole pieces of fruit to be cut up for certain types of salads. I believe that a grading system would spread sales more equally among various grades of merchandise to the mutual advantage of consumer and producer.

### *Standard Nomenclature Needed*

If we do adopt this kind of labeling, the nomenclature of the grades established certainly needs standardization. In the grades used in the wholesale market, the introduction of complicated and different grade names has already resulted in a confusing array of meaningless words which no one can keep in mind, much less remember their rank in order of excellence.

Assuming that these were all introduced in the retail market, how could any one human being remember that canned fruits are graded as Fancy, Choice, and Standard; beef as Prime, Choice, Good, Medium, Common, Cutter, and Low Cutter; rabbits as Prime, Choice, and Commercial; rice as Extra Fancy, Fancy, Extra Choice, Choice, and Medium; brooms as Super, Fancy, and Service, and so on ad infinitum.

Canned mushrooms have outdistanced all these in the race to heights of absurdity. We are supposed to remember the following names and order of rating when we go to buy that delicacy—Extra Miniature, Miniature, Sur Extra Petite, Sur Extra, Small Extras or Extra Petite, Extras, First Choice, Choice Pieces, and Stems.

### *"Hidden" Grades Make Buying Difficult*

Another difficulty in grade nomenclature is the "hidden" higher grades. Our friends, the mirror manufacturers, have devised a scheme of retail grade names which effectively keeps the consumer in the dark. If I buy a mirror labeled Grade No. 1, naturally I should assume I had the highest quality. But on further investigation, I find that No. 1 does not stand at the top of the mirror digits. Strangely enough not only is it overshadowed by an A grade but at the very top we find a double A. This is true not only of some commercial grades but also of some government grades. For example, there are many "hidden" higher grades in the government systems of grading fruits and vegetables.

Recognizing the reluctance of some vendors to label their product B or C or anything lower than A, could not one set of words be used in all these grading systems, with specifications set for each class which would describe clearly to the consumer the qualities of that class and the suitability of that class for specific purposes? That is all the consumer wants to know.

Granted that quality standards cannot be applied to all commodities, are there not in every case definite facts which could be given the purchaser?

We are finding a recognition of the need for informative labels. More labels are appearing on merchandise now-a-days than ever before. Unfortunately all too often the same meaningless superlatives are used or subterfuges which only further weaken the consumer's confidence. For example, how can a silk be "pure" and "weighted" at the same time? To any logical mind, this is an impossibility and yet heavily weighted silk slips labeled "pure dye" are piled high on our counters, and an organization is attempting to gain consumer confidence by labels bearing at the top the words "pure silk" in large type and at the bottom in smaller type the word "weighted."

A clerk in one of the largest department stores in Washington naïvely remarked when a fabric labeled "washable" was returned with a com-

Today, one in every five wage earners is a woman, and this army of 10,750,000 women gainfully employed has the attitude of all who earn the money they spend.

They want that money's worth.

More and more in their work in offices and laboratories women are becoming acquainted with business methods of buying.

More and more do they not only hear about but help to write specifications for industrial purchases.

Less and less are they impressed by those beautiful superlatives. In 1930, over 3,000,000 married women were employed, or one in eight of all the married women of the country.

The economic viewpoint of our women is being changed by this experience.

plaint that it faded "Oh, 'washable' just means that you *can* wash the material; it does not mean the colors won't run or the fabric shrink." What is the meaning of such labels as pre-shrunk and super-shrunk? Why can we not have some definitions for such terms and then come out in a straight-forward fashion and tell the customer what they mean. Subterfuges build up ill-will and not good-will.

Why do we object to setting up a plane of competition in which the purchaser will, through suitable standards and grades, be given an opportunity to know what he is buying? Even a cursory glance at things as they are leads us to believe that much of what is called vicious price cutting would be impossible and would stop if the nature of the commodity or service were made known to the consumer.

During the past few months we witnessed an interesting phase in the history of our dry cleaning industry. Efforts were made to establish a minimum price for this service. This was of course impossible because here we have an example of a service that is unstandardized and undefined. Everything from a hasty rinse in dirty solvent up through an infinite variety of unskilled and skilled procedure to plenty of fine effective jobs at the top of the scale, is still sold under the one name of "dry cleaning."

Asking what is the fair minimum price for this service is like asking what is the fair minimum price for an automobile. We have everything from toys which children call automobiles up to the finest product of the automotive art and science. How can one set a minimum fair price for such a product? The question of a fair minimum price means nothing without the quality of the thing or service defined.

It is chiefly because consumers have no measure of quality that they are misled into buying inferior products, often with the result that inferior goods drive superior goods off the market. The return of merchandise which has proved unsatisfactory would undoubtedly be considerably reduced if more definite information concerning quality were given the customer.

## A.S.T.M. Insulating Standards Published in One Volume

All of the American Society for Testing Materials specifications and test methods covering electrical insulating materials, and the annual report of Committee D-9 on Electrical Insulating Materials, are published in *A.S.T.M. Standards on Electrical Insulating Materials*, now on sale by the American Society for Testing Materials, and through the office of the American Standards Association.

Of the 21 standardized methods of test and 12 specifications included in the book, one, the method of testing molding powder used in manufacturing molded electrical insulators, has not been published before. Revisions have been made in the test methods for varnishes, solid filling and treating compounds, untreated paper, sheet and plate materials, varnished cloths and cloth tapes, laminated tubes and round rods, and electrical porcelain.

Changes in conducting the following tests were also approved during 1934: power factor and dielectric constant, resistance to impact, and thickness.

Revised specifications cover black bias-cut varnished cloth tape, friction tape, rubber insulating tape, asbestos roving, and asbestos yarns and tape.

The report of Committee D-9 outlines the major points of interest in the extensive research and standardization work now being carried on, and includes a modified Baader saponification test for insulating oils.

Copies of the book in heavy paper cover, 284 pages, can be purchased from the American Society for Testing Materials, 260 South Broad Street, Philadelphia, or from the American Standards Association, at $1.75 each.

## Safety Engineers Elect Officers

Cyril Ainsworth, Assistant Secretary, American Standards Association, has been elected a member of the Executive Committee of the American Society of Safety Engineers, Engineering Section.

A. S. Regula, Industrial Relations Counselors, Inc., New York, was elected General Chairman of the Executive Committee.

Vice-Chairmen elected are C. W. Smith, Standard Oil Company of Indiana, Chicago, and E. F. Blank, Jones & Laughlin Steel Corporation, Pittsburgh.

Other members of the Executive Committee are: D. L. Royer, Ocean Accident & Guarantee Corporation, New York; C. E. Ralston, Pittsburgh Plate Glass Company, Pittsburgh; and R. C. Stratton, The Travelers Insurance Company, Hartford.

The secretary of the Engineering Section is W. Dean Keefer, National Safety Council, Chicago.

# Says Grading Is Necessary in Paper-Making Industry[1]

by
**Ernst Mahler**

## Grading Essential to Future of Paper Industry; Central Grading Committee Wants Permanent Program to Stabilize Market

A QUARTER of a year ago the Paper Industry Authority created the Central Grading Committee. Since that time grades have been established in certain divisions, and an attempt has been made to acquaint the industry with the theories and procedures involved in the program.

Standardization and grading activities are not peculiar to the paper industry. A survey has shown that out of 465 codes approximately 37 per cent provide for standardization or grading of some kind. Some of the more progressive industries saw the need of such a program long before the NRA.

Although the grading program was initiated by the code, it is a long-time program, and one which must be vigorously pursued regardless of the fate of the NRA. Grading is the next important step to be taken by industry. We are said to be coming into an era of distribution, and certainly distribution means a product related to proper use requirements. Countless grades and continually changing properties are not profitable, nor are they desirable. Products should be changed as research and use reveal the way to make them better, but unknown quantities and qualities of grades serving as a means of confusing competitor and consumer alike, and as a subterfuge for uneconomic competition, are not desirable or healthy.

A basic principle of the NRA is that of fair competition, and to that end a clear definition of grades is necessary, in the interests both of the manufacturer and of the consumer.

Grading does not mean a surrendering of individual skill and character; it could not, and should not penalize merit. It is a definition of salient and broad properties and makes no attempt to specify every detail of a paper. Its purpose is to clearly define the issues and to prevent unfair competition and multiplicity or misrepresentation of goods and services. Grading must be based on a liberal policy which permits enough freedom of action by each individual mill to allow progress and at the same time recognizes the principle of fair competition.

We have become aware of certain evils extant under our present set-up. It has been possible to file papers of similar qualities and usable for the same purpose with different divisions. This practice of "substitution" of grades is very confusing and a disturbing market factor. Proper alignment and evaluation of grades would go a long way in remedying this situation.

If the paper industry is to progress, it must have complete data and statistics. But capacity of production, production ratio, stocks on hand, etc., only assume real significance when related to grades.

Expense incurred in the grading procedure is not significant in light of results. Associations that have gone ahead with the program will bear this statement out. An organization would not hesitate to spend money in a plant improvement that would pay for itself many times over in resultant economy. How then can we hesitate over relatively small sums spent in analysis and grading work that will have permanent value if correctly administered? Grading is not an academic argument or a necessary form of red-tape. It is a proposition that means an actual return in terms of dollars and cents.

Grade structures are not static. The emergency character of some of the grading means that the grades are necessarily dependent, to a certain extent, upon market conditions. If subsequent investigation and experience reveals these grades to be inadequate, or unjust, they can be altered to form a more logical picture. The system is a flexible one, and as the total structure reveals itself, the parts can be adjusted into harmony with the whole.

[1] Abstract of address delivered before the Paper Industry Authority, October 11.

The function of the Central Grading Committee is fairly obvious. Grading demands a complete familiarity with the products under consideration from manufacturing, technical and sales viewpoints. Certainly each division is more familiar with the details and peculiarities of its product than the Central Grading Committee. It must be emphasized, however, that the whole paper structure is inter-related. Action taken within one division influences more than its own members. The structure must be viewed as a whole. The same general principles must prevail, the same general methods must be used. Activities must be correlated so that no fraction of the industry is injured by action of others. In certain instances there may be interdivisional questions that will have to be referred to a neutral party.

The Central Grading Committee is formed, therefore, to correlate grading activities, to act in an advisory capacity, and to serve as a court in the event of inter-divisional problems.

The Central Grading Committee feels that grading is an internal problem. It should be undertaken as a permanent step regardless of the fate of the immediate codes and the NRA. It is a problem within the industry and one that must be solved by the industry itself.

Grading should be accomplished because all recognize it as a necessary and valuable step. It should be accomplished with due regard to the natural progress of the industry. Grading should be a result of self-enlightenment and self-discipline rather than a function imposed by external forces.

## Committee Asks Industry's Comments on Draft Standard

A proposed American Standard for sizes and mounting dimensions of gages, and sizes and types of connections of gages and cocks, indicator hands, and stop pins, has been developed by the subcommittee on Gage Sizes and Mounting Dimensions, of the ASA committee on Pressure and Vacuum Gages.[1]

The draft of the proposed standard has been released to industry for review, and the subcommittee will consider any comments and criticism received.

The American Society of Mechanical Engineers is sponsoring the work of the committee on Pressure and Vacuum Gages, under the procedure of the American Standards Association. M. D. Engle, Assistant to the Superintendent of Station, Engineering Department, Edison Illuminating Company, Boston, is chairman of the subcommittee on Gage Sizes and Dimensions, and A. W. Lenderoth, New York Sales Manager, Crosby Steam Gage and Valve Company, New York, is secretary.

Those interested in the draft standard may borrow a copy from the American Standards Association Library.

[1] B40.

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## Standards Committee Governs Canadian Buying

Purchases made by the Dominion of Canada will now be handled through a Canadian Government Purchasing Standard Committee, consisting of the deputy heads of interested government departments under the chairmanship of the President of the National Research Council. It is understood that this Committee will effect a liaison with the Canadian Engineering Standards Association.

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## A.S.T.M. Compiles Symposium on Outdoor Weathering of Metals

A symposium, *Outdoor Weathering of Metals and Metallic Coatings*, intended to illustrate applications of the American Society for Testing Materials corrosion test data in solving materials problems, has been published by the A.S.T.M.

The symposium evaluates much of the performance data obtained from the extensive outdoor weathering tests carried out by the Committees on Corrosion of Iron and Steel, A-5 and on Corrosion of Non-Ferrous Metals and Alloys, B-3.

Subjects covered include: Outdoor Test Results on Bare and Metal-Coated Ferrous Specimens; The Harmony of Outdoor Weathering Tests; Influence of Rainfall and Smoke on the Corrosion of Iron and Steel; Early Interpretation of Test Results in the Atmospheric Corrosion of Non-Ferrous Metals and Alloys; Galvanic Corrosion by Contact of Dissimilar Metals. A considerable portion of the publication is devoted to discussion.

Copies of the book can be obtained from the American Society for Testing Materials, 260 South Broad Street, Philadelphia, or from the American Standards Association at $1.25 each for heavy paper cover, $1.50 for cloth cover.

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## British Auto Engineers Issue Standards Report

The Institution of Automobile Engineers, London, has issued the third annual report of its Research and Standardization Committee.

Subjects on which the Committee has carried on investigations and which are included in the report are causes of cylinder, valve seat and big

end bearing wear, factors influencing oil consumption, and frictional properties of brake linings and drums. Other subjects being investigated are piston temperatures and prevention of corrosion of ball bearings in storage. The Committee is cooperating with the Road Research Board and with the National Physical Laboratory in experiments on road impact and skidding.

The number of companies affiliated with the Institution has grown from 28 in 1931 to 144 in 1934.

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## Jenkins Bros. Is ASA Company Member

Jenkins Bros., New York, manufacturers and dealers in bronze, cast steel and iron valves, and manufacturers of rubber sheeting packings, pump valves, gaskets and rubber specialties, have joined the American Standards Association as Company Members.

As ASA members they are entitled to free copies of all standards published by the American Standards Association, a discount on all approved American Standards, free subscriptions to INDUSTRIAL STANDARDIZATION AND COMMERCIAL STANDARDS MONTHLY, and special information service from the ASA Library.

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### Report Results of Conference On Electrical Installations

The official Report on the Informal International Conference on Electrical Installations on Board Ships, held at The Hague, June 8, 1934, can be borrowed from the American Standards Association Library.

Representatives of electrical and naval organizations of Czecho-Slovakia, Denmark, France, Germany, Great Britain, Italy, Norway, The Netherlands, and of the International Standards Association were present at the conference.

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### Six Countries Seek to Establish Uniformity of Gas Appliance Labels

Gas appliance labeling is practiced in Germany, Canada, France, Holland, Sweden, and Switzerland, as well as in the United States, a French delegate reported to the International Gas Conference, which was held in Zurich September 1 to 4.

It is evident, the report said, that no two countries have identical practices in the manner of determining calorific content and other factors.

A small committee is to be named by the president of the Conference to determine whether some degree of uniformity can be attained. The report of this committee will be presented before the next international conference.

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### A.S.T.M. Committee Recommends Revisions for Testing Textiles

At the 20th Anniversary Meeting of the American Society for Testing Materials Committee D-13 on Textile Materials, held in New York October 17—19, proposed methods for testing length, distribution, fineness, and shrinkage of raw cotton; and shrinkage and laundering of silk and rayon broad goods, were recommended.

A revision in the General Methods of Testing Woven Textile Fabrics[1] involving a method of determining elongation will be considered by letter-ballot of the committee.

Changes were recommended in the Standard Specifications for Textile Testing Machines[2] to recognize the acceptability of a certain type of tensile testing machine and to care for other technical details.

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### Park Represents Department of Commerce on ASA Council

The U. S. Department of Commerce, Member-Body of the American Standards Association, has named C. A. Park, Bureau of Lighthouses, as its representative on the Standards Council. Mr. Park replaces O. P. Hood, formerly Department of Commerce representative on the Council, who has been transferred to the Department of the Interior.

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## British Revise Rules For Electrical Equipment

A copy of the Tenth Edition of the Regulations for the Electrical Equipment of Buildings, September, 1934, issued by the Institution of Electrical Engineers of Great Britain, has been received by the ASA and is available for loan to those interested.

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## Midwest Piping Company Becomes ASA Member

The Midwest Piping and Supply Company, Inc., St. Louis, manufacturers of pipe and fittings, is a new Company Member of the American Standards Association.

[1] ASA L5-1934; A.S.T.M. D39-34.
[2] A.S.T.M. D76-33.

# WIRES, CABLES & INSULATORS

## American Standard specifications, definitions, etc.

| | | |
|---|---|---|
| C8a-1932 | Definitions and General Standards for Wires and Cables *AIEE 30-1932* | .40 |
| C8b1-1928 | Tinned Soft or Annealed Copper Wire for Rubber Insulation, Specifications for (Also pub. as H16-1928) *AIEE 60, 61-1928 ASTM B33-21* | .30 |
| C8b2-1928 | Soft or Annealed Copper Wire, Specifications for (Also pub. as H4-1928) *AIEE 60, 61-1928 ASTM B3-27* | |
| C8d1-1928 | 30% Rubber Insulation for Wire and Cable for General Purposes, Specifications for *AIEE 63-1298* | .30 |
| C8j1-1928 | Cotton Covered Round Copper Magnet Wire, Specifications for *AIEE 69-1928* | .30 |
| C8j2-1928 | Silk Covered Round Copper Magnet Wire, Specifications for *AIEE 70-1929* | |
| C8j3-1928 | Enameled Round Copper Magnet Wire, Specifications for *AIEE 71-1928* | |
| C8k1-1932 | Weatherproof (Weather Resisting) Wires and Cables *AIEE 72-1932* | .20 |
| C8k2-1932 | Heat Resisting Wires and Cables *AIEE 73-1932* | |
| C8.10-1933 | Impregnated Paper Insulation for Lead Covered Power Cables *(mimeographed)* | .15 |
| C8.11-1933 | Code Rubber Insulation for Wire and Cable for General Purposes, Specifications for *(mimeographed)* | .15 |
| C29a-1930 | Insulator Tests *AIEE 41-1930* | .30 |

*Members of the American Standards Association are requested to deduct their 20 per cent discount when paying for standards. Due to the cost of billing and carrying charge accounts on small items, will you please enclose your remittance with your order?*

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